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TO: Commissioner for Patents

FAX NO.: 571-273-8300

FROM: Kin-Wah Tong

DATE: August 24, 2005

MATTER: Serial No. 09/989,779 Filed: November 20, 2001

DOCKET NO.: ATT/2001-0067

APPLICANT: MILLER II et al.

The following has been received in the U.S. Patent and Trademark Office on the date of this facsimile:

___ Petition
___ Disclosure Statement & PTO-1449
___ Priority Document
___ Drawings (___ sheets) informal
X Appeal Brief
___ Petition of Extension of Time
___ _____

X Transmittal Form
X Fee Transmittal
X Deposit Account Transaction
X Facsimile Transmission Certificate dated August 24, 2005
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/989,779
Filing Date	November 20, 2001
First Named Inventor	Robert Raymond Miller II
Art Unit	2686
Examiner Name	Bryan J. Fox
Total Number of Pages in This Submission	
Attorney Docket Number	ATT/2001-0067

ENCLOSURES *(check all that apply)*

- ☒ Fee Transmittal Form
  - ☒ Fee Attached
- ☐ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) ____
- ☐ After Allowance Communication to Technology Center (TC)
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☒ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) *(please identify below)*:
  Facsimile transmission sheet

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	KIN-WAH TONG, Reg. No. 39,400
Signature	
Date	August 24, 2005

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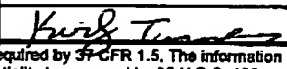
Signature		Date	August 24, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL for FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 500.00

Complete if Known	
Application Number	09/989,779
Filing Date	November 20, 2001
First Named Inventor	Robert Raymond Miller II
Examiner Name	Bryan J. Fox
Art Unit	2686
Attorney Docket No.	ATT/2001-0087

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) :

☒ Deposit Account Deposit Account Number: 20-0782 Deposit Account Name: Moser, Patterson & Sheridan, LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES	Small Entity	SEARCH FEES	Small Entity	EXAMINATION FEES	Small Entity	
Application Type	Fee ($)	Fee($)	Fee($)	Fee($)	Fee($)	Fee($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims		Fee($)		Fee Paid ($)
00	-20 or HP=	0	x		=	0

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims		Fee($)		Fee Paid ($)
0	- 3 or HP=	0	x		=	0

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	Fee Paid ($)

3. APPLICATION SIZE FEE

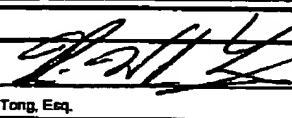
If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
	- 100 =		/ 50 =		(round up to a whole number) x		=	

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge) : Filing a Brief in support of an Appeal	$500.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	39,400	Telephone	(732) 530-9404
Name (Print/Type)	Kin-Wah Tong, Esq.			Date	August 24, 2005

PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:
Miller II et al.

Serial No.: 09/989,779

Group Art Unit: 2686

Confirmation No.: 2039

Examiner: Fox, Bryan J.

Filed: November 20, 2001

For: Protocol Assisted Switched Diversity of Antennas

MAIL STOP APPEAL BRIEF - PATENTS
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Kristy Turner
Date

8/24/05
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Dear Sir:

APPEAL BRIEF

Appellants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2686 dated January 25, 2005, finally rejecting claims 1-21. Please charge the fee of $500.00 for filing this brief and all other fees that may be required to make this Brief timely and acceptable to the Patent Office, to Deposit Account No. 20-0782/ATT2001-0067.

REAL PARTY IN INTEREST

The real party in interest is AT&T, Corp.

08/26/2005 MBINAS 00000012 200782 09989779
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RELATED APPEALS AND INTERFERENCES

The Appellants know of no related appeals or interferences that might directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-21 are pending in the application. Claims 1-21 were originally presented in the application. Claims 1-21 stand rejected in view of several references as discussed below. The rejection of claims 1-21 based on the cited references is appealed. The pending claims are shown in the attached Appendix.

STATUS OF AMENDMENTS

Amendments to the claims in this application were submitted subsequent to final rejection. However, since the amendments to the claims made in response to the Final Office Action were not entered, the Appellants are appealing the claims as they read at the time the final rejection was issued. These claims are shown in the attached Appendix.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention provides for a method and apparatus pertaining to protocol assisted switched diversity of antennas. In the embodiment of independent claim 1, the invention comprises a radio receiver (100) that comprises a first antenna (101) and a second antenna (102), both of which are connected to radio frequency (RF) processing circuitry (104) via an RF switch (103). The receiver (100) also comprises an RF switch control (109) that communicates with the RF switch (103) (see Appellants' specification, paragraph 15 and FIG. 1). The RF switch control (109) is used to switch between the first and second antennas in response to a predefined schedule of a sequence of scheduled packet bursts (see Appellants' specification, paragraph 18).

In the embodiment of independent claim 5, a method for maintaining a controlled quality of service (QoS) in a wireless communication system is described. The method comprises receiving scheduled communications, which are formatted as multiple packet

bursts, from a transceiver at a transmission station in accordance with a predefined schedule by wireless transceivers at receiving stations having switched protocol diversity reception operational modes. A first antenna (101) and a second antenna (102) are then enabled to receive a first packet burst and a second packet burst, respectively, in accordance with the predefined schedule. The method then records the received packet bursts as soft information in a storage medium and subsequently combines the soft information from the first and second bursts into a single message (see Appellants' specification, paragraph 18).

In the embodiment of independent claim 8, a method of achieving a quality of service (QoS) control in a wireless local area network (LAN) communication system is claimed. The method includes transmitting a message contained within a plurality of packet bursts that occur at spaced time intervals. Each of the packet bursts are then individually received at one of a plurality of antennas in accordance with a predefined schedule. The predefined schedule is used to select the one of the plurality of antennas for receiving each packet burst (see Appellants' specification, paragraph 18).

In the embodiment of independent claim 13, a communication system for coupling a transmitter and a receiver (100) that is adapted for receiving at least a first signal burst and a second signal burst via a first antenna (101) and a second antenna (102), respectively, is described. The communication system responds to a first signal burst and a second signal burst that are sequentially separated in time in accordance with a predefined schedule. The first and second antennas are sequentially enabled in accordance with the predefined schedule to communicate with at least one storage medium (107 or 108) that is located at the receiver (see Appellants' specification, paragraph 18). A representation of the unified message is then enabled by responding to the first and second signal bursts (see Appellants' specification, paragraphs 9 and 18-20).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 4, 8, 9, 11, 13, 15, 16, and 18 stand rejected under 35 U.S.C. §102 as being anticipated by the Suzuki patent (U.S. Patent No. 5,787,122, hereinafter "Suzuki"). Claims 2, 3, and 12 stand rejected under 35 U.S.C. §103(a) as being obvious

over Suzuki in view of Aaronson et al. (U.S. Patent No. 6,363,062, hereinafter "Aaronson"). Claims 5 and 6 stand rejected under 35 U.S.C. §103(a) as being obvious over Ohashi et al. (European Patent Application No. EP 0740430, hereinafter "Ohashi") in view of Khayrallah (XP-000889044, hereinafter "Khayrallah"). Claim 7 stands rejected under 35 U.S.C. §103(a) as being obvious over Ohashi in view of Khayrallah in further view of Suzuki. Claim 10 stands rejected under 35 U.S.C. §103(a) as being obvious over Suzuki in view of Struhsaker et al. (U.S. Patent Application No. 2002/0141355, hereinafter "Struhsaker"). Claims 14, 17, and 21 stand rejected under 35 U.S.C. §103(a) as being obvious over Suzuki in view of Ohashi. Claims 19 and 20 stand rejected 35 U.S.C. §103(a) as being obvious over Suzuki in view of Sampath et al. (U.S. Patent Application No. 2003/0012308, hereinafter "Sampath").

ARGUMENT

A. 35 U.S.C. §102

1. Claim 1

The Examiner has rejected claim 1 under 35 U.S.C. § 102 as being anticipated by Suzuki. Appellants respectfully traverse the rejection.

Suzuki teaches a method and apparatus for transmitting and receiving encoded data as burst signals using a number of antennas. Specifically, Suzuki teaches a reception system that sends a reception signal encoded and dispersed into a plurality of symbols (See Suzuki, Column 9, Lines 2-6). The reception signal is then received by a plurality of antennas (See Suzuki, Column 9, Lines 7-12). Each time the antenna switcher receives burst data, the antenna switcher switches the antenna under control of the communication control unit. The antennas may be selected in the previously determined sequential order or may be randomly selected based on data generated at random (Emphasis added, See Suzuki, Column 9, Lines 13-26). The reception signal obtained is then demodulated, deinterleaved and reconverted into the original data (See Suzuki, Column 9, Lines 27-33).

The Board's attention is directed to the fact that Suzuki fails to teach or to suggest the novel concept of switching between a first antenna and a second antenna

in response to a predefined schedule of a sequence of scheduled packet bursts, as positively claimed by the Appellants. Specifically, Appellants' independent claim 1 positively recites:

> 1. A radio receiver comprising
> first and second antennas connected to RF processing circuitry by an RF switch;
> an RF switch control in communication with said RF switch, said RF switch control for switching between said first and second antennas in response to a predefined schedule of a sequence of scheduled packet bursts. (Emphasis added)

Appellants' invention provides for the reception of digital radio signals using a protocol assisted switched diversity antenna system. A significant aspect of the invention is that antennas are switched in response to packet bursts or signal bursts that are scheduled or ordered by time intervals. Namely, the antennas are switched in accordance with a predefined schedule. For example, Appellants' specification (Paragraph 0018) discloses:

> When the base station determines that downlink (to the client) traffic has arrived from the network, it schedules a series of burst transmissions (in this example, two). The base station initiates message transmission by issuing a polling request, followed by the first packet burst. The first burst, containing the message, will be received exclusively on the antenna which has been in use (the RF switch remains set for the duration of the burst). While the burst is being received, the receiver's output (soft symbols and signal strength values) is stored sequentially in buffer 107. At the conclusion of the base station's transmission, the client transmits a polling response, followed by any uplink (to the base station) traffic it may have to send. The microprocessor, which has been adhering the protocol, immediately causes the RF switch to connect the alternate antenna to the receiver, in preparation for reception of the second burst, containing the same message. At some later moment in the current superframe or a subsequent superframe, the base station transmits a second polling request and the second packet burst. This burst is received exclusively using the second antenna; the receiver output is similarly stored sequentially in buffer 108. (Emphasis added).

Thus, the packet bursts are first scheduled and then sent to the receiver in accordance with that predefined schedule. Consequently, the switching of the antennas is also performed in accordance with the predefined schedule. It should be noted that

polling is implemented between the receiver and the base station so that the scheduling of the packet bursts are synchronized.

The Appellants respectfully submit that the Examiner has interpreted the definition of TDMA too broadly. The Examiner states that "Suzuki discloses that the system is a TDMA system . . . so all transmissions and receptions are according to a predefined schedule of a sequence of scheduled packet bursts." However, the Examiner has failed to explain how a TDMA system anticipates switching between a first antenna and a second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. The Appellants respectfully assert that TDMA simply defines how data packets are transmitted and received, as the Examiner alleges, but does not teach, show or suggest how a RF switch controller will select an antenna. As such, Suzuki clearly fails to teach or suggest an RF switch control for switching a plurality of antennas in response to a predefined schedule of a sequence of scheduled packet bursts, e.g., packet bursts occurring at scheduled spaced time intervals. In contrast, Suzuki's antennas are switched in response to a previously determined sequential order or may be randomly selected based on data generated at random. (See Suzuki, Column 9, Lines 21-24). A predefined sequential order and a random order is not a predefined schedule. Nor does a TDMA system implicitly teach the selection of antennas via a RF control switch.

Furthermore, the Appellants respectfully submit that even if TDMA theory could be used for RF switch control, that TDMA still does not teach, show or suggest the Appellants' invention. TDMA is not a predefined schedule of packet bursts, but rather a sequence of packet bursts. "Schedule" is defined by dictionary.com as "[a] plan for performing work or achieving an objective, specifying the order and allotted time for each part." (See www.dictionary.com, Emphasis Added). The Appellants' invention teaches RF switch control for switching a plurality of antennas in response to a predefined schedule of a sequence of scheduled packet bursts because the predefined schedule instructs which antenna to receive from first (i.e. the order) and the amount of time displacement (i.e. the allotted time). In contrast, TDMA is not analogous to the "predefined schedule" of the Appellants' invention because time slots in TDMA are fixed. The order that packets are transmitted or received is limited by the sequence of

the time slots. Moreover, no useful information may ever be conveyed by the time period between two TDMA bursts because the time spacing is constant. As such, TDMA theory cannot be meaningfully used to teach RF switch control as taught by the Appellants' invention.

Therefore, the Appellants respectfully submit that independent claim 1 is clearly patentable and not anticipated by Suzuki.

2. Claim 4

Claim 4 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

The Appellants submit that Suzuki does not teach, show, or suggest all of the limitations of independent claim 1. Since Suzuki does not anticipate the Appellants' invention as recited in Appellants' independent claim 1, dependent claim 4 is also not anticipated since the claim depends directly from claim 1 and recites additional features of the present invention. Thus, claim 4 should be deemed patentable for at least the reasons stated above with respect to independent claim 1.

Secondly, the Appellants contend that Suzuki does not teach the novel aspect of an RF switch control for switching between a first and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts combined with the concept of switching the antennas in a manner that each antenna receives a related packet burst as set forth in claim 4. Thus, the Appellants respectfully submit that claim 4 is patentable under the provisions of 35 U.S.C. §102.

3. Claim 8

Claim 8 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

Suzuki has been discussed above.

The Board's attention is directed to the fact that Suzuki fails to teach or to suggest the novel method of receiving packet burst bursts individually at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is used to select one of the plurality of antennas for receiving each of the

packet bursts, as positively claimed by the Appellants. Specifically, Appellants' independent claim 8 positively recites:

> 8. A method of achieving a QoS control in a wireless LAN communication system, comprising steps of:
> transmitting a message contained within a plurality of packet bursts occurring at spaced time intervals;
> receiving each of the packet burst bursts individually at one of a plurality of antennas in accordance with a predefined schedule, where said predefined schedule is used to select one of said plurality of antennas for receiving each of said packet bursts. (Emphasis added)

Appellants' invention provides a method and system for the reception of digital radio signals using a protocol assisted switched diversity antenna system. One aspect of the invention is that the antennas are switched in response to packet bursts or signal bursts that are scheduled or ordered by time intervals. Namely, the antennas are switched in accordance with a predefined schedule as disclosed in paragraph 18 of the Appellants specification.

Thus, the packet bursts are first scheduled and then sent to the receiver in accordance with that predefined schedule. Consequently, the switching of the antennas is also performed in accordance with the predefined schedule. It should be noted that polling is implemented between the receiver and the base station so that the scheduling of the packet bursts are synchronized.

The Appellants respectfully submit that the Examiner has interpreted the definition of TDMA too broadly. The Examiner states that "Suzuki discloses that the system is a TDMA system . . . so all transmissions and receptions are according to a predefined schedule of a sequence of scheduled packet bursts." However, the Examiner has failed to explain how being a TDMA system anticipates switching between a first antenna and a second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. The Appellants respectfully assert that TDMA simply defines how data packets are transmitted and received, as the Examiner asserts, but does not teach, show or suggest how a RF switch controller will select an antenna. As such, Suzuki clearly fails to teach or suggest an RF switch control for switching a plurality of antennas in response to a predefined schedule of a sequence of scheduled

packet bursts, e.g., packet bursts occurring at scheduled spaced time intervals. In contrast, Suzuki's antennas are switched in response to a previously determined sequential order or may be randomly selected based on data generated at random. (See Suzuki, Column 9, Lines 21-24). A predefined sequential order and a random order is not a predefined schedule. Nor does a TDMA system implicitly teach the selection of antennas via a RF control switch.

Furthermore, the Appellants respectfully submit that even if TDMA theory could be used for RF switch control, that TDMA still does not teach, show or suggest the Appellants' invention. TDMA is not a predefined schedule of packet bursts, but rather a sequence of packet bursts. "Schedule" is defined by dictionary.com as "[a] plan for performing work or achieving an objective, specifying the order and allotted time for each part." (See www.dictionary.com, Emphasis Added). The Appellants' invention teaches RF switch control for switching a plurality of antennas in response to a predefined schedule of a sequence of scheduled packet bursts because the predefined schedule instructs which antenna to receive from first (i.e. the order) and the amount of time displacement (i.e. the allotted time). In contrast, TDMA is not analogous to the "predefined schedule" of the Appellants' invention because time slots in TDMA are fixed. The order that packets are transmitted or received is limited by the sequence of the time slots. Moreover, no useful information may ever be conveyed by the time period between two TDMA bursts because the time spacing is constant. As such, TDMA theory cannot be meaningfully used to teach RF switch control as taught by the Appellants' invention.

Therefore, the Appellants respectfully submit that independent claim 8 is clearly patentable and not anticipated by Suzuki.

4. Claim 9

Claim 9 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

The Appellants submit that Suzuki does not teach, show, or suggest all of the limitations of independent claim 8. Since Suzuki does not anticipate the Appellants' invention as recited in Appellants' independent claim 8, dependent claim 9 is also not

anticipated since the claim depends directly from claim 8 and recites additional features of the present invention. Thus, claim 9 should be deemed patentable for at least the reasons stated above with respect to independent claim 8.

Secondly, the Appellants contend that Suzuki does not teach the novel method of individually receiving packet bursts at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is use to select one of the antennas for receiving each of the packet bursts combined with the aspect that each of the plurality of antennas is connected to a radio receiver at separate times relative to the other antennas, as set forth in claim 9. Thus, the Appellants respectfully submit that claim 9 is patentable under the provisions of 35 U.S.C. §102.

5. Claim 11

Claim 11 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

The Appellants submit that Suzuki does not teach all of the limitations of independent claim 8. Since Suzuki does not anticipate the Appellants' invention as recited in Appellants' independent claim 8, dependent claim 11 is also not anticipated since the claim depends directly from claim 8 and recites additional features of the present invention. Thus, claim 11 should be deemed patentable for at least the reasons stated above with respect to independent claim 8.

Secondly, the Appellants contend that Suzuki does not teach the novel method of individually receiving packet bursts at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is use to select one of the antennas for receiving each of the packet bursts combined with the aspect that a message is spread across the plurality of packet bursts by space-time coding, as set forth in claim 11. Thus, the Appellants respectfully submit that claim 11 is patentable under the provisions of 35 U.S.C. §102.

6. Claim 13

Claim 13 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

The Board's attention is directed to the fact that Suzuki fails to teach or to suggest the novel communication system wherein a first antenna and a second antenna are sequentially enabled in accordance with a predefined schedule as positively claimed by the Appellants. Specifically, Appellants' independent claim 13 positively recites:

> 13. A communication system for coupling a transmitter and a receiver adapted for receiving at least first and second signal bursts by first and second antennas respectively, and responding to the two signal bursts to communicate a single unified message at the receiver; whereby:
> the first and second signal bursts are sequentially separated in time in accordance with a predefined schedule;
> the first and second antennas are sequentially enabled in accordance with said predefined schedule to communicate to with at least one storage medium at the receiver;
> enabling a representation of the unified message by responding to the first and second signals signal bursts. (Emphasis added)

Appellants' invention provides a method and system for the reception of digital radio signals using a protocol assisted switched diversity antenna system. One aspect of the invention is that the antennas are switched in response to packet bursts or signal bursts that are scheduled or ordered by time intervals. Namely, the antennas are switched in accordance with a predefined schedule as disclosed in paragraph 18 of the Appellants specification.

Thus, the packet bursts are first scheduled and then sent to the receiver in accordance with that predefined schedule. Consequently, the switching of the antennas is also performed in accordance with the predefined schedule. It should be noted that polling is implemented between the receiver and the base station so that the scheduling of the packet bursts are synchronized.

The Appellants respectfully submit that the Examiner has interpreted the definition of TDMA too broadly. The Examiner states that "Suzuki discloses that the system is a TDMA system . . . so all transmissions and receptions are according to a predefined schedule of a sequence of scheduled packet bursts." However, the Examiner has failed to explain how being a TDMA system anticipates switching between a first antenna and a second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. The Appellants respectfully assert that TDMA

simply defines how data packets are transmitted and received, as the Examiner asserts, but does not teach, show or suggest how a RF switch controller will select an antenna. As such, Suzuki clearly fails to teach or suggest an RF switch control for switching a plurality of antennas in response to a predefined schedule of a sequence of scheduled packet bursts, e.g., packet bursts occurring at scheduled spaced time intervals. In contrast, Suzuki's antennas are switched in response to a previously determined sequential order or may be randomly selected based on data generated at random. (See Suzuki, Column 9, Lines 21-24). A predefined sequential order and a random order is not a predefined schedule. Nor does a TDMA system implicitly teach the selection of antennas via a RF control switch.

Furthermore, the Appellants respectfully submit that even if TDMA theory could be used for RF switch control, that TDMA still does not teach, show or suggest the Appellants' invention. TDMA is not a predefined schedule of packet bursts, but rather a sequence of packet bursts. "Schedule" is defined by dictionary.com as "[a] plan for performing work or achieving an objective, specifying the order and allotted time for each part." (See www.dictionary.com, Emphasis Added). The Appellants' invention teaches RF switch control for switching a plurality of antennas in response to a predefined schedule of a sequence of scheduled packet bursts because the predefined schedule instructs which antenna to receive from first (i.e. the order) and the amount of time displacement (i.e. the allotted time). In contrast, TDMA is not analogous to the "predefined schedule" of the Appellants' invention because time slots in TDMA are fixed. The order that packets are transmitted or received is limited by the sequence of the time slots. Moreover, no useful information may ever be conveyed by the time period between two TDMA bursts because the time spacing is constant. As such, TDMA theory cannot be meaningfully used to teach RF switch control as taught by the Appellants' invention.

Therefore, the Appellants respectfully submit that independent claim 13 is clearly patentable and not anticipated by Suzuki.

7. Claim 15

Claim 15 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

The Appellants submit that Suzuki does not teach, show, or suggest all of the limitations of independent claim 13. Since Suzuki does not anticipate the Appellants' invention as recited in Appellants' independent claim 13, dependent claim 15 is also not anticipated since the claim depends directly from claim 13 and recites additional features of the present invention. Thus, claim 15 should be deemed patentable for at least the reasons stated above with respect to independent claim 13.

Secondly, the Appellants contend that Suzuki does not teach the novel aspect of a communication system that comprises a first antenna and second antenna that are sequentially enabled in accordance with a predefined schedule to communicate with at least one storage medium at a receiver combined with the aspect that a first and second signal bursts are each part of a space-time coded message spread across two bursts and wherein a common message is derived from the sequential signal burst received by the antennas, as set forth in claim 15. Thus, the Appellants respectfully submit that claim 15 is patentable under the provisions of 35 U.S.C. §102.

8. Claim 16

Claim 16 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

The Appellants submit that Suzuki does not teach, show, or suggest all of the limitations of independent claim 13. Since Suzuki does not anticipate the Appellants' invention as recited in Appellants' independent claim 13, dependent claim 16 is also not anticipated since the claim depends directly from claim 13 and recites additional features of the present invention. Thus, claim 16 should be deemed patentable for at least the reasons stated above with respect to independent claim 13.

Secondly, the Appellants contend that Suzuki does not teach the novel aspect of a communication system that comprises a first antenna and second antenna that are sequentially enabled in accordance with a predefined schedule to communicate with at least one storage medium at a receiver combined with the aspect of retaining the first and second signal bursts in at least one storage medium and processing to deliver the single unified message, as set forth in claim 16. Thus, the Appellants respectfully submit that claim 16 is patentable under the provisions of 35 U.S.C. §102.

9. Claim 18

Claim 18 stands rejected under 35 U.S.C. §102 as being unpatentable over Suzuki. The Appellants respectfully disagree.

The Appellants submit that Suzuki does not teach, show, or suggest all of the limitations of independent claim 13. Since Suzuki does not anticipate the Appellants' invention as recited in Appellants' independent claim 13, dependent claim 18 is also not anticipated since the claim depends indirectly from claim 13 and recites additional features of the present invention. Thus, claim 18 should be deemed patentable for at least the reasons stated above with respect to independent claim 13.

Secondly, the Appellants contend that Suzuki does not teach the novel aspect of a communication system that comprises a first antenna and second antenna that are sequentially enabled in accordance with a predefined schedule to communicate with at least one storage medium at a receiver combined with the aspect of deriving a common message by decoding a space-time coded signal spread across and received by both the first and second antennas, as set forth in claim 18. Thus, the Appellants respectfully submit that claim 18 is patentable under the provisions of 35 U.S.C. §102.

B. 35 U.S.C. §103(a) – Suzuki in view of Aaronson

1. Claim 2

The Examiner has rejected claim 2 in the Office Action under 35 U.S.C. §103 as being unpatentable over Suzuki in view of Aaronson. Appellants respectfully traverse the rejection.

The teachings of Suzuki have been discussed above. Aaronson teaches a communications protocol for packet data. A MAC layer schedules communication bursts taking into account factors such as propagation delay between the different nodes, queuing of data and synchronization of the time transmitting from multiple nodes (See Aaronson, Column 3, Lines 22-30).

However, Aaronson fails to bridge the substantial gap left by Suzuki. Specifically, Aaronson also fails to disclose the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts.

As stated above, Suzuki simply does not teach or suggest the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. Rather, the antennas in Suzuki are switched in accordance with a previously determined order or randomly selected based on data generated at random. (Emphasis added, See Suzuki, Column 9, Lines 21-24.) Suzuki does not teach antennas that have the capability of being switched in response to scheduled packet or signal bursts. This deficiency is not bridged by the teaching of Aaronson because Aaronson only teaches using MAC protocol to schedule packet data. (See Aaronson, Column 3, Lines 22-30.)

In arguendo, even if Suzuki and Aaronson were combined, the combination would still not teach or suggest Appellants' invention. The combination of Suzuki and Aaronson would only teach a method and apparatus for transmitting and receiving data packets using a number of antennas, wherein each antenna, that receives the data packets, is chosen in a pre-determined order or randomly. Therefore, the combination of Suzuki and Aaronson does not teach or suggest Appellants' invention as recited in independent claim 1.

Since Suzuki in view of Aaronson does not make obvious the Appellants' invention as recited in Appellants' independent claim 1, dependent claim 2 is also not made obvious since the claim depends directly from claim 1 and recites additional features of the present invention. Thus, claim 2 should be deemed patentable for at least the reasons stated above with respect to independent claim 1.

Secondly, the Appellants contend that the combination of Suzuki and Aaronson does not teach the novel aspect of an RF switch control for switching between a first and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts combined with the concept scheduling sequence burst prescribed by a QoS defined by a MAC protocol, as set forth in claim 2. Thus, the Appellants respectfully submit that claim 2 is patentable under the provisions of 35 U.S.C. §103.

2. Claim 3

Claim 3 stands rejected under 35 U.S.C. §103 as being unpatentable over Suzuki in view of Aaronson. The Appellants respectfully disagree.

The Appellants submit that Suzuki and Aaronson do not, in any permissible combination, teach, show, or suggest all of the limitations of independent claim 1. Since Suzuki in view of Aaronson does not make obvious the Appellants' invention as recited in Appellants' independent claim 1, dependent claim 3 is also not made obvious since the claim depends directly from claim 1 and recites additional features of the present invention. Thus, claim 3 should be deemed patentable for at least the reasons stated above with respect to independent claim 1.

Secondly, the Appellants contend that the combination of Suzuki and Aaronson does not teach the novel aspect of an RF switch control for switching between a first and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts in combination with the fact that the RF switch control is a MAC processor that is synchronized with transmission of a base station, as set forth in claim 3. Thus, the Appellants respectfully submit that claim 3 is patentable under the provisions of 35 U.S.C. §103.

3. Claim 12

Claim 12 stands rejected under 35 U.S.C. §103 as being unpatentable over Suzuki in view of Aaronson. The Appellants respectfully disagree.

The Examiner has rejected claim 8 in the Office Action under 35 U.S.C. §103 as being unpatentable over Suzuki in view of Aaronson. Appellants respectfully traverse the rejection.

The teachings of Suzuki have been discussed above. Aaronson teaches a communications protocol for packet data. A MAC layer schedules communication bursts taking into account factors such as propagation delay between the different nodes, queuing of data and synchronization of the time transmitting from multiple nodes (See Aaronson, Column 3, Lines 22-30).

However, Aaronson fails to bridge the substantial gap left by Suzuki. Specifically, Aaronson also fails to disclose the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts.

As stated above, Suzuki simply does not teach or suggest the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. Rather, the antennas in Suzuki are switched in accordance with a previously determined order or randomly selected based on data generated at random. (Emphasis added, See Suzuki, Column 9, Lines 21-24.) Suzuki does not teach antennas that have the capability of being switched in response to scheduled packet or signal bursts. This deficiency is not bridged by the teaching of Aaronson because Aaronson only teaches using MAC protocol to schedule packet data. (See Aaronson, Column 3, Lines 22-30.)

In arguendo, even if Suzuki and Aaronson were combined, the combination would still not teach or suggest Appellants' invention. The combination of Suzuki and Aaronson would only teach a method and apparatus for transmitting and receiving data packets using a number of antennas, wherein each antenna, that receives the data packets, is chosen in a pre-determined order or randomly. Therefore, the combination of Suzuki and Aaronson does not teach or suggest Appellants' invention as recited in independent claim 8.

Since Suzuki in view of Aaronson does not make obvious the Appellants' invention as recited in Appellants' independent claim 8, dependent claim 12 is also not made obvious since the claim depends directly from claim 8 and recites additional features of the present invention. Thus, claim 12 should be deemed patentable for at least the reasons stated above with respect to independent claim 8.

Secondly, the Appellants contend that the combination of Suzuki or Aaronson does not teach or suggest the novel method of individually receiving packet bursts at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is use to select one of the antennas for receiving each of the packet bursts combined with the notion that transmitting a message combines a protocol with signal processing, as set forth in claim 12. Thus, the Appellants respectfully submit that claim 12 is patentable under the provisions of 35 U.S.C. §103.

C. 35 U.S.C. §103(a) – Ohashi in view of Khayrallah

1. Claim 5

The Examiner has rejected claim 5 in the Office Action under 35 U.S.C. § 103 as being unpatentable over Ohashi in view of Khayrallah. Appellants respectfully traverse the rejection.

Ohashi teaches a diversity radio communication system where an antenna switch circuit switches the first and second antennas to connect them to the transmit/receive switch circuit (See Ohashi, Page 6, lines 1-8).

Khayrallah teaches an improved time-diversity method. The number of antennas is grouped based on the depth of the interleaver. Then the antennas are selected according to conventional selection diversity methods such as, to maximize signal strength or signal-to-noise ratio. (See Khayrallah, Paragraph 2, Lines 10-11). In another embodiment, the antennas can be cycled in a pre-determined pattern or at random. (See Khayrallah, Paragraph 3, Lines 4-5).

However, Ohashi and Khayrallah (either singly or in any permissible combination) fail to teach, show or suggest the Appellants' invention. Specifically, Ohashi and Khayrallah fail to disclose the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. Appellants' independent claim 5 positively recites:

> 5. A method of maintaining a controlled QoS in a wireless communication system, comprising steps of:
> receiving scheduled communications from a transceiver at a transmission station in accordance with a predefined schedule by wireless transceivers at receiving stations having switched protocol diversity reception operational modes, where said scheduled communications being formatted as multiple packet bursts;
> enabling a first antenna to receive a first packet burst in accordance with said predefined schedule;
> enabling a second antenna to receive a second packet burst in accordance with said predefined schedule;
> recording the received bursts as soft information in a storage medium; and
> combining the soft information from the first and second bursts into a single message. (Emphasis added).

In arguendo, even if Ohashi and Khayrallah were combined, the combination would still not teach or suggest Appellants' invention. The combination of Ohashi and Khayrallah would teach a diversity radio communication system that would switch to a

particular antenna chosen from a group of antennas; the receiver cycling through the groups of antennas in a pre-determined order or at random. Therefore, the combination of Ohashi and Khayrallah does not teach or suggest Appellants' invention as recited in independent claim 5.

Therefore, Appellants respectfully submit that independent claim 5 is patentable and not made obvious by Ohashi and Khayrallah.

2. Claim 6

Claim 6 stands rejected under 35 U.S.C. §103 as being unpatentable over Ohashi in view of Khayrallah. The Appellants respectfully disagree.

The Appellants submit that Ohashi and Khayrallah do not, in any permissible combination, teach, show, or suggest all of the limitations of independent claim 5. Since Ohashi in view of Khayrallah does not make obvious the Appellants' invention as recited in Appellants' independent claim 5, dependent claim 6 is also not made obvious since the claim depends directly from claim 5 and recites additional features of the present invention. Thus, claim 6 should be deemed patentable for at least the reasons stated above with respect to independent claim 5.

Secondly, the Appellants contend that the combination of Ohashi and Khayrallah does not teach the novel method of receiving scheduled communications from a transceiver at a transmission station in accordance with a predefined schedule by wireless transceivers, wherein the scheduled communications are being formatted as multiple packet bursts, combined with the aspect that each packet burst contains the same complete message as set forth in claim 6. Thus, the Appellants respectfully submit that claim 6 is patentable under the provisions of 35 U.S.C. §103.

C. 35 U.S.C. §103(a) – Ohashi in view of Khayrallah in further view of Suzuki

1. Claim 7

The Examiner has rejected claim 7 in the Office Action under 35 U.S.C. § 103 as being unpatentable over Ohashi in view of Khayrallah in further view of Suzuki. Appellants respectfully traverse the rejection.

The teachings of Ohashi, Khayrallah and Suzuki have been discussed above. However, the combination of Ohashi, Khayrallah and Suzuki fail to teach, show or suggest the Appellants' invention. Specifically, the Ohashi, Khayrallah and Suzuki fail to disclose the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts.

In arguendo, even if Ohashi, Khayrallah and Suzuki were combined, the combination would still not teach or suggest Appellants' invention. The combination of Ohashi, Khayrallah and Suzuki would teach a diversity radio communication system that could send an encoded signal over a plurality of burst data that would switch to a particular antenna chosen from a group of antennas; the receiver cycling through the groups of antennas in a pre-determined order or at random. Therefore, the combination of Ohashi, Khayrallah and Suzuki does not teach or suggest Appellants' invention as recited in independent claim 5.

Since Ohashi in view of Khayrallah in further view of Suzuki does not make obvious the Appellants' invention as recited in Appellants' independent claim 5, dependent claim 7 is also not made obvious since the claim depends directly from claim 5 and recites additional features of the present invention. Thus, claim 7 should be deemed patentable for at least the reasons stated above with respect to independent claim 5.

Secondly, the Appellants contend that the combination of Ohashi, Khayrallah, and Suzuki does not teach or suggest the novel method of receiving scheduled communications from a transceiver at a transmission station in accordance with a predefined schedule by wireless transceivers, wherein the scheduled communications are being formatted as multiple packet bursts, combined with the aspect that each packet burst contains a portion of a space-time coded message spread across a first and second packet bursts, as set forth in claim 7. Thus, the Appellants respectfully submit that claim 7 is patentable under the provisions of 35 U.S.C. §103.

D. 35 U.S.C. §103(a) – Suzuki in view of Struhsaker

1. Claim 10

The Examiner has rejected claim 10 in the Office Action under 35 U.S.C. § 103 as being unpatentable over Suzuki in view of Struhsaker et al. (US 2002/0141355, published October 3, 2002, herein referred to as Struhsaker). Appellants respectfully traverse the rejection.

The teachings of Suzuki have been discussed above. Struhsaker teaches a wireless access system and associated method using multiple modulation formats in TDD frames according to subscriber service type. Further, Struhsaker teaches that information can be sent in packet data units (PDU). Each PDU can be broken into segments that are protected by FEC CRC fields, thus avoiding wasting bandwidth. (See Struhsaker, Page 12, Paragraph 159).

However, Struhsaker fails to bridge the substantial gap left by Suzuki. Specifically, Struhsaker also fails to disclose the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts:

As stated above, Suzuki simply does not teach or suggest the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. Rather, the antennas in Suzuki are switched in accordance with a previously determined order or randomly selected based on data generated at random. (Emphasis added, See Suzuki, Column 9, Lines 21-24). Suzuki does not teach antennas that have the capability of being switched in response to scheduled packet or signal bursts. This deficiency is not bridged by the teaching of Struhsaker because Struhsaker only teaches that packet data unit may be a complete packet transmission or a fragment of a much larger message. (See Struhsaker, Page 12, Paragraph 159).

In arguendo, even if Suzuki and Struhsaker were combined, the combination would still not teach or suggest Appellants' invention. The combination of Suzuki and Struhsaker would teach a method and apparatus for transmitting and receiving packet data units that contain a complete message using a number of antennas; where each antenna, that receives the packet data units, is chosen in a pre-determined order or randomly. Therefore, the combination of Suzuki and Struhsaker does not teach or suggest Appellants' invention as recited in independent claim 8.

Since the combination of Suzuki and Struhsaker does not make obvious the Appellants' invention as recited in Appellants' independent claim 8, dependent claim 10 is also not made obvious since the claim depends directly from claim 8 and recites additional features of the present invention. Thus, claim 10 should be deemed patentable for at least the reasons stated above with respect to independent claim 8.

Secondly, the Appellants contend that the combination of Suzuki and Struhsaker does not teach or suggest the novel method of individually receiving packet bursts at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is used to select one of the antennas for receiving each of the packet bursts combined with the aspect of including a complete message with each packet burst, as set forth in claim 10. Thus, the Appellants respectfully submit that claim 10 is patentable under the provisions of 35 U.S.C. §103.

E. 35 U.S.C. §103(a) – Suzuki in view of Ohashi

1. Claim 14

The Examiner has rejected claim 14 in the Office Action under 35 U.S.C. §103 as being unpatentable over Suzuki in view of Ohashi. Appellants respectfully traverse the rejection.

The teachings of Suzuki and Ohashi have been discussed above. However, Ohashi fails to bridge the substantial gap left by Suzuki. Specifically, Ohashi also fails to disclose the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts.

As stated above, Suzuki simply does not teach or suggest the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. Rather, the antennas in Suzuki are switched in accordance with a previously determined order or randomly selected based on data generated at random (Emphasis added, See Suzuki, Column 9, Lines 21-24). Suzuki does not teach antennas that have the capability of being switched in response to scheduled packet or signal bursts. This deficiency is not bridged by the teaching of Ohashi because Ohashi only teaches a diversity radio communication system that has the ability to request re-transmission of the same data if an error is detected (See

Ohashi, Page 10, Lines 57 – Page 11, Line 2). Therefore, the combination of Suzuki and Ohashi does not teach or suggest Appellants' invention as recited in independent claim 13.

Since the combination of Suzuki and Ohashi does not make obvious the Appellants' invention as recited in Appellants' independent claim 13, dependent claim 14 is also not made obvious since the claim depends directly from claim 13 and recites additional features of the present invention. Thus, claim 14 should be deemed patentable for at least the reasons stated above with respect to independent claim 13.

Secondly, the Appellants contend that the combination of Suzuki and Ohashi does not teach or suggest the novel aspect of a communication system that comprises a first antenna and second antenna that are sequentially enabled in accordance with a predefined schedule to communicate with at least one storage medium at a receiver combined with the aspect that a first and second signal bursts are identical packets of a common message, as set forth in claim 14. Thus, the Appellants respectfully submit that claim 14 is patentable under the provisions of 35 U.S.C. §103.

2. Claim 17

The Examiner has rejected claim 17 in the Office Action under 35 U.S.C. §103 as being unpatentable over Suzuki in view of Ohashi. Appellants respectfully traverse the rejection.

As discussed above, since the combination of Suzuki and Ohashi does not make obvious the Appellants' invention as recited in Appellants' independent claim 13, dependent claim 17 is also not made obvious since the claim depends indirectly from claim 13 and recites additional features of the present invention. Thus, claim 17 should be deemed patentable for at least the reasons stated above with respect to independent claim 13.

Secondly, the Appellants contend that the combination of Suzuki and Ohashi does not teach or suggest the novel aspect of a communication system that comprises a first antenna and second antenna that are sequentially enabled in accordance with a predefined schedule to communicate with at least one storage medium at a receiver combined with deriving a common message by selecting a message from one of the

antennas, as set forth in claim 17. Thus, the Appellants respectfully submit that claim 17 is patentable under the provisions of 35 U.S.C. §103.

3. Claim 21

The Examiner has rejected claim 21 in the Office Action under 35 U.S.C. §103 as being unpatentable over Suzuki in view of Ohashi. Appellants respectfully traverse the rejection.

As discussed above, since the combination of Suzuki and Ohashi does not make obvious the Appellants' invention as recited in Appellants' independent claim 8, dependent claim 21 is also not made obvious since the claim depends directly from claim 8 and recites additional features of the present invention. Thus, claim 21 should be deemed patentable for at least the reasons stated above with respect to independent claim 8.

Secondly, the Appellants contend that the combination Suzuki and Ohashi does not teach the novel method of individually receiving packet bursts at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is use to select one of the antennas for receiving each of the packet bursts combined with the notion that upon reconstruction of a received message, sending a message to a transmitting end to cease further message bursts, as set forth in claim 21. Thus, the Appellants respectfully submit that claim 21 is patentable under the provisions of 35 U.S.C. §103.

F. 35 U.S.C. §103(a) – Suzuki in view of Sampath

1. Claim 19

The Examiner has rejected claim 19 under 35 U.S.C. § 103 as being unpatentable over Suzuki in view of Sampath. Appellants respectfully traverse the rejection.

The teachings of Suzuki have been discussed above. Sampath teaches a method of adaptive channel estimation for wireless systems. Further, Sampath teaches that signals can be sent with training symbols embedded in data symbols (See Sampath, Abstract).

However, Sampath fails to bridge the substantial gap left by Suzuki. Specifically, Sampath also fails to disclose the novel concept of switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts.

As stated above, Suzuki simply does not teach or suggest the novel concept switching between a first antenna and second antenna in response to a predefined schedule of a sequence of scheduled packet bursts. This deficiency is not bridged by the teaching of Sampath because Sampath only teaches a method of adaptive channel estimation for wireless systems that include the ability to embed training symbols in data symbols (See Sampath, Abstract). Therefore, the combination of Suzuki and Sampath does not teach or suggest Appellants' invention as recited in independent claim 8.

Since the combination of Suzuki and Sampath does not make obvious the Appellants' invention as recited in Appellants' independent claim 8, dependent claim 19 is also not made obvious since the claim depends directly from claim 8 and recites additional features of the present invention. Thus, claim 19 should be deemed patentable for at least the reasons stated above with respect to independent claim 8.

Secondly, the Appellants contend that the combination of Suzuki and Sampath does not teach or suggest the novel method of individually receiving packet bursts at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is use to select one of the antennas for receiving each of the packet bursts combined with notifying a transmitter at a transmitting end by a receiving end of a number of a number of antennas and radio receivers at the receiving end, as set forth in claim 19. Thus, the Appellants respectfully submit that claim 19 is patentable under the provisions of 35 U.S.C. §103.

2. Claim 20

The Examiner has rejected claim 20 under 35 U.S.C. § 103 as being unpatentable over Suzuki in view of Sampath. Appellants respectfully traverse the rejection.

As discussed above, since the combination of Suzuki and Sampath does not make obvious the Appellants' invention as recited in Appellants' independent claim 8, dependent claim 20 is also not made obvious since the claim depends directly from claim 8 and recites additional features of the present invention. Thus, claim 20 should be deemed patentable for at least the reasons stated above with respect to independent claim 8.

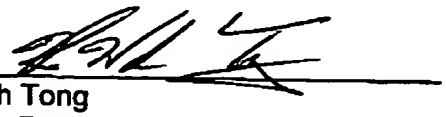
Secondly, the Appellants contend that the combination of Suzuki and Sampath does not teach or suggest the novel method of individually receiving packet bursts at one of a plurality of antennas in accordance with a predefined schedule, wherein the predefined schedule is use to select one of the antennas for receiving each of the packet bursts combined with a receiver notifying a transmitter that the receiver accepts and responds to protocol-assisted diversity operations, as set forth in claim 20. Thus, the Appellants respectfully submit that claim 20 is patentable under the provisions of 35 U.S.C. §103.

CONCLUSION

For the reasons advanced above, Appellants respectfully urge that the rejections of claims 1, 4, 8, 9, 11, 13, 15, 16, and 18 as being unpatentable under 35 U.S.C. §102 and the rejections of claims 2, 3, 5, 6, 7, 10, 12, 14, 17, 19, 20, and 21 as being unpatentable under 35 U.S.C. §103 are improper. Reversal of the rejections in this appeal is respectfully requested. If necessary, please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 20-0782/ATT2001-0067, and please credit any excess fees to the above referenced deposit account.

Respectfully submitted,

8/24/05



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CLAIMS APPENDIX

1. A radio receiver comprising

first and second antennas connected to RF processing circuitry by an RF switch;

an RF switch control in communication with said RF switch, said RF switch control for switching between said first and second antennas in response to a predefined schedule of a sequence of scheduled packet bursts.

2. The radio receiver of claim 1, wherein:

the RF switch control schedules sequence bursts prescribed by a QoS defined by a MAC protocol.

3. The radio receiver of claim 2, wherein:

said RF switch control is a MAC processor that is synchronized with transmission of a base station.

4. The radio receiver of claim 1, wherein:

the antennas are switched so that each antenna receives a related packet burst.

5. A method of maintaining a controlled QoS in a wireless communication system, comprising steps of:

receiving scheduled communications from a transceiver at a transmission station in accordance with a predefined schedule by wireless transceivers at receiving stations having switched protocol diversity reception operational modes, where said scheduled communications being formatted as multiple packet bursts;

enabling a first antenna to receive a first packet burst in accordance with said predefined schedule;

enabling a second antenna to receive a second packet burst in accordance with said predefined schedule;

recording the received bursts as soft information in a storage medium; and

combining the soft information from the first and second bursts into a single message.

6. The method of claim 5 wherein:
each packet burst contains a same complete message.

7. The method of claim 5 wherein:
each packet burst contains a portion of a space-time coded message spread across the first and second packet bursts.

8. A method of achieving a QoS control in a wireless LAN communication system, comprising steps of:
transmitting a message contained within a plurality of packet bursts occurring at spaced time intervals;
receiving each of the packet bursts individually at one of a plurality of antennas in accordance with a predefined schedule, where said predefined schedule is used to select one of said plurality of antennas for receiving each of said packet bursts.

9. The method of claim 8 wherein;
each of the plurality of the antennas is connected to a radio receiver at separate times relative to other antennas.

10. The method of claim 8, wherein:
including a complete message within each packet burst.

11. The method of claim 8 wherein:
a message is spread across the plurality of packet bursts by space-time coding.

12. The method of claim 8 wherein:
the transmitting combines a protocol with signal processing.

13. A communication system for coupling a transmitter and a receiver adapted for receiving at least first and second signal bursts by first and second antennas respectively, and responding to the two signal bursts to communicate a single unified message at the receiver; whereby:

the first and second signal bursts are sequentially separated in time in accordance with a predefined schedule;

the first and second antennas are sequentially enabled in accordance with said predefined schedule to communicate with at least one storage medium at the receiver;

enabling a representation of the unified message by responding to the first and second signal bursts.

14. The communication system of claim 13, wherein:

the first and second signal bursts are identical packets of a common message.

15. The communication system of claim 13, wherein:

the first and second signal bursts are each part of a space-time coded message spread across two bursts; and

a common message is derived from the sequential signal bursts received by the first and second antennas.

16. The communication system of claim 13, wherein:

said enabling includes retaining the first and second signal bursts in said at least one storage medium and processing to deliver the single unified message.

17. The communication system of claim 15, wherein:

said deriving the common message includes selecting a message from one of the antennas.

18. The communication system of claim 15, wherein:

said deriving the common message includes decoding a space-time coded signal spread across and received by both the first and second antennas.

19. The method of claim 8, including a further step of:

notifying a transmitter at a transmitting end by a receiving end of a number of antennas and radio receivers at the receiving end.

20. The method of claim 8, including a further step of:

a receiver notifying a transmitter that said receiver accepts and responds to protocol-assisted diversity operations.

21. The method of claim 8, including a further step of:

upon reconstruction of a received message sending a message to a transmitting end to cease further message bursts.

EVIDENCE APPENDIX

None

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RELATED PROCEEDINGS APPENDIX

None